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EXAMINER
WONG, BLANCHE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	09/756,680	CAM ET AL.
	Examiner	Art Unit	
	Blanche Wong	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>27 February 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-15</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-15</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed February 20, 2007 have been fully considered but

they are not persuasive.

With regard to claims 1 and 10, Applicant states that "[t]here is no commonality in

the *meaning* of the works in reference Ayanoglu and as employed in the current

applicant" (with emphasis). Applicant also states that "'in-band communication' refers

to control information traveling over the same set of wires as the payload and 'out-of-

band communications' refer to control information traveling over a different set of wires

from the payload. Therefore, Applicant amended the claims with "hard-wire". Remark,

p.10, para. 4. However, Examiner respectfully disagrees.

If Applicant is arguing different paths for "in-band" and "out-of-band", Ayanoglu

defines "in-band" using an ATM cell that uses the same VCI as the user information of

client payload and "out-of-band" using an ATM cell that uses the standard signaling VCI,

col. 11, lines 53-55. Ayanoglu uses two different VCIs. ATM is a connection orientated

protocol. Connection are identified using VPI/VCI. The pair are not addresses. They

are explicitly assigned at each segment (link between ATM nodes) of a connection

when a connection is established and remain for the duration of the connection.

Different VPI and/or different VCI identify different segments of a connection.

Therefore, different VCIs identify different paths.

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount

to a general allegation that the claims define a patentable invention without specifically

pointing out how the language of the claims patentably distinguishes them from the references.

If Applicant is arguing that the system is hard-wired, Ayanoglu discloses an ATM infrastructure. ATM is a connection orientated protocol. Furthermore, "hard-wire" is well-known in the art at the time of the invention. It is not patentable novelty.

Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

With regard to claims 1 and 11, Applicant states that "[b]oth Ofek and Ayanoglu are wireless systems". Remark, p.11, para. 3. However, Examiner respectfully disagrees.

If Applicant is arguing that the invention is limited to wired, as oppose to wireless, systems, such a limitation is not disclosed in the Specification. Moreover, the pertinent parts of Ofek and Ayanoglu are "wired" on a microelectronics or device level respectively. See switching fabric in Fig. 1, Ofek and see ATM in Fig. 7, Ayanoglu.

In response to applicant's argument that the invention is not for a wireless system, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

With regards to claims 1 and 10, Applicant states that "peer-to-peer communications would not be examples for communications between a first and second layer device". Remark, p.12, para. 1.

If Applicant is arguing that communications are limited to only communications between a first and second layer device, such a limitation is not recited in the claims. Specifically, the claim recites "from *one* of said first and second layer devices to *another* of said first and second layer devices" in lines 6-7 and lines 11-12 (with emphasis).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., communications between a first and second layer device) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

With regard to claim 10, Applicant states that "a single control word being able to signal end-of-packet and start-of-packet is not disclosed by Ayanoglu or Ofek". Remark, p.12, para. 2.

If Applicant is arguing a single control word being able to signal end-of-packet and start-of-packet, such a limitation is not recited in the claims.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a single control word being able to signal end-of-packet and start-of-packet) are not recited in the rejected claim(s). Although the claims are interpreted in light of the

specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

With regard to claims 11 and 12, Applicant states that "the meaning of FIFO status in Fukui is completely different from that used in the current application. ... In the current application, FIFO status refers to the number of bytes in the FIFO". Remark, p.13, para. 2.

If Applicant is arguing the number of bytes in the FIFO, such a limitation is not recited in the claims.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the number of bytes in the FIFO) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

With regard to claims 11 and 12, Applicant states that "Fukui does not do zero bit insertion". Remark, p.13, para. 2.

If Applicant is arguing zero bit insertion, such a limitation is not recited in the claims.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., zero bit insertion) are not recited in the rejected claim(s). Although the claims are

interpreted in light of the specification, limitations from the specification are not read into

the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

With regard to claims 11 and 12, Applicant states that "Fukui does not transmit

FIFO status flow information out-of-band ... as only starts and ends of packets

boundaries in the FIFO are monitored". Remark, p.14, para. 1.

If Applicant is arguing FIFO status flow information such as starts and ends of

packet boundaries in the FIFO, such a limitation is not recited in the claims.

In response to applicant's argument that the references fail to show certain

features of applicant's invention, it is noted that the features upon which applicant relies

(i.e., FIFO status flow information such as starts and ends of packet boundaries in the

FIFO) are not recited in the rejected claim(s). Although the claims are interpreted in

light of the specification, limitations from the specification are not read into the claims.

See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Objections

2.   Claims 14 and 15 are objected to because of the following informalities:

With regard to claim 14, line 9, "said plurality of data lines" should be replaced

with "said M data lines" in consistent with "M data lines" in line 2.

With regard to claim 14, lines 11 and lines 18-19, "said M sets of registers"

should be replaced with "said M register sets" in consistent with "M register sets" in line

7.

With regard to claim 14, lines 12-13, "said registers" should be replaced with "said M register sets" in consistent with "M register sets" in line 7.

With regard to claim 15, line 5, "n bit" should be replaced with "n-bit" for clarity.

With regard to claim 15, line 13, line 15 and line 17, "17 sets of registers" should be replaced with "said 17 register sets" in consistent with "17 register sets" in line 9.

With regard to claim 15, line 20, "said 17 registers" should be replaced with "said 17 register sets" in consistent with "17 register sets" in line 9.

With regard to claim 15, lines 20-21 and line 21, "said transition detection blocks" should be replaced with "said 17 transition detection blocks" in consistent with "17 transition detection blocks" in line 16.

With regard to claim 15, line 22, "said training detector" should be replaced with "said training detector block" in consistent with the "training detector block" in line 13.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4.   **Claims 1-13** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With regard to claims 1 and 11, "hard-wired" is not discloses in the specification and is new matter.

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6.   **Claims 9,12,14,15** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claims 14 and 15, it is unclear whether M and W as defined in (b) applies also to (a) and (c)-(e). Therefore, it is unclear what is M and W in (a) and (c)-(e).

With regard to claim 14, line 8, and claim 15, line 10, it is unclear whether x means multiplication.

With regard to claim 15, lines 2-3, it is unclear what is meant by corresponding in "each one coupled to a corresponding input data line of a plurality of data lines" and whether there are 17 data lines.

With regard to claim 15, lines 17,19 and 26, it is unclear whether * means multiplication.

With regard to claim 15, lines 19-20, it is unclear whether "the training pattern [that] has been detected within said n * W bits of each of said 17 registers" is the same as the "training pattern based on the contents of said 17 sets of registers" in line 15.

With regard to claim 15, it is unclear how the 17 transition detection blocks are coupled to the 17 registers sets and what do the 17 transition detection blocks do.

With regard to claim 15, it is unclear how an aligner block are coupled to the 17

register sets and how it selects a bit from each of the 17 register sets.

With regard to claim 15, line 27, it is unclear whether "present" means output.

7.   There is insufficient antecedent basis for this limitation in the claim.

Claim 9, lines 1-2, "transfer information".

Claim 12, line 2, "said second layer devices".

Claim 14, line 16, "said M sets of W registers".

Claim 15, line 11, "said 17 input data lines".

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9.   **Claims 1 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Ayanoglu et al. (U.s. Pat No. 5,822,309) in view of Ofek (U.S. Pat No. 6,760,328).

With regard to claim 1, Ayanoglu discloses a signaling and control architecture

(a) dividing control information **(signaling scheme) (a hybrid in-band and out-**

of-band signaling scheme, col. 12, line 9) into an in-band portion **(in-band)**

and an out-of-band **(out-of-band)** portion;

(b) transmitting the in-band portion of said control information along a hard-wired

path **(ATM is a connection orientated protocol) (see ATM in Fig. 7)** for data

from one **(mobiles 28, col. 3, line 58)** of said first and second layer devices to

another **(peer-to-peer, col. 3, line 59)** of said first and second layer devices,

wherein said in-band control information controls data bus lanes **(VCI indicates**

a segment) and not data **(payload)** **("in-band" using ATM cell that uses the**

same VCI as the user information of client payload) (In-band signaling

implies using the VPI and VCI if the assigned connection with the payload

type field indicating a signaling cell, col. 11, lines 53-55);

(c) transmitting the out-of-band portion of said control information along a hard-

wired path **(ATM is a connection orientated protocol) (see ATM in Fig. 7)** for

control/signaling **("out-of-band" using an ATM cell that uses the standard**

signaling VCI) (In-band signaling implies using the VPI and VCI if the

assigned connection with the payload type field indicating a signaling cell,

col. 11, lines 53-55), different than said data path **("in-band" using an ATM**

cell that uses the same VCI as the user information of client payload and

"out-of-band" using an ATM cell that uses the standard signaling VCI, col.

11, lines 53-55. There are two different VCIs. ATM is a connection

orientated protocol. Connection are identified using VPI/VCI. The pair are

not addresses. They are explicitly assigned at each segment (link between

ATM nodes) of a connection when a connection is established and remain

for the duration of the connection. Different VPI and/or different VCI

identify different segments of a connection. Therefore, different VCIs

identify different paths), from one **(mobiles 28, col. 3, line 58)** of said first and

second layer devices to another **(peer-to-peer, col. 3, line 59)** of said first and

second layer devices; and

(d) inserting in a data path **(in-band)** a control **(VCI)** of data signal to identify

when the data path contains control information and when it contains data.

whereby re-encoding of data and insertion of control information upon

predetermined intervals is avoided **("in-band" using an ATM cell that uses the**

same VCI as the user information of client payload and "out-of-band" using

an ATM cell that uses the standard signaling VCI, col. 11, lines 53-55).

However, Ayanoglu fails to explicitly show control information having a plurality of

control word.

In an analogous art, Ofek discloses controlled data transmission by

control information having a plurality of control words **(control words) (control**

words are used as in-band signaling to indicate data packet start and end, col. 22,

lines 28-29; and**).**

At the time of the invention, it would have been obvious to a person of ordinary

skill in the art to combine control information having a plurality of control word as taught

in Ofek with Ayanoglu in order to adjust for a variety of link speeds. Ofek, col. 22, line

23.

With regard to claim 10, the combination of Ayanoglu and Ofek discloses a

method according to claim 1.

Ofek further discloses a single control word of a plurality of control words

(control words) that may contain control information **(signaling)** that applies to data

preceding **(start indicates the end of the previous)** a single control word as well as

data following **(end indicates the beginning of the next)** a single control word

(control words are used as in-band signaling to indicate data packet start and

end, col. 22, lines 28-29).

At the time of the invention, it would have been obvious to a person of ordinary

skill in the art to combine a single control word of a plurality of control words that may

contain control information that applies to data preceding a single control word as well

as data following a single control word as taught in Ofek with Ayanoglu in order to adjust

for a variety of link speeds. Ofek, col. 22, line 23.

.10.   **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over

Ayanoglu in view of Fukui et al. (U.S. Pat No. 6,266,349).

With regard to claim 1, Ayanoglu discloses a signaling and control architecture

(a) dividing control information **(signaling scheme) (a hybrid in-band and out-**

of-band signaling scheme, col. 12, line 9) into an in-band portion **(in-band)**

and an out-of-band **(out-of-band)** portion;

(b) transmitting the in-band portion of said control information along a hard-wired

path **(ATM is a connection orientated protocol) (see ATM in Fig. 7)** for data

from one **(mobiles 28, col. 3, line 58)** of said first and second layer devices to

another **(peer-to-peer, col. 3, line 59)** of said first and second layer devices,

wherein said in-band control information controls data bus lanes **(VCI indicates**

a segment) and not data **(payload) ("in-band" using ATM cell that uses the**

same VCI as the user information of client payload) (In-band signaling

implies using the VPI and VCI if the assigned connection with the payload

type field indicating a signaling cell, col. 11, lines 53-55);

(c) transmitting the out-of-band portion of said control information along a hard-

wired path (ATM is a connection orientated protocol) (see ATM in Fig. 7) for

control/signaling ("out-of-band" using an ATM cell that uses the standard

signaling VCI) (In-band signaling implies using the VPI and VCI if the

assigned connection with the payload type field indicating a signaling cell,

col. 11, lines 53-55), different than said data path ("in-band" using an ATM

cell that uses the same VCI as the user information of client payload and

"out-of-band" using an ATM cell that uses the standard signaling VCI, col.

11, lines 53-55. There are two different VCIs. ATM is a connection

orientated protocol. Connection are identified using VPI/VCI. The pair are

not addresses. They are explicitly assigned at each segment (link between

ATM nodes) of a connection when a connection is established and remain

for the duration of the connection. Different VPI and/or different VCI

identify different segments of a connection. Therefore, different VCIs

identify different paths), from one (mobiles 28, col. 3, line 58) of said first and

second layer devices to another (peer-to-peer, col. 3, line 59) of said first and

second layer devices; and

(d) inserting in a data path (in-band) a control (VCI) of data signal to identify

when the data path contains control information and when it contains data ("in-

band" using an ATM cell that uses the same VCI as the user information of

client payload and "out-of-band" using an ATM cell that uses the standard

signaling VCI, col. 11, lines 53-55).

However, Ayanoglu fails to explicitly show (e) transmitting FIFO status flow information

out-of-band whereby re-encoding of data and insertion of control information upon pre-

determined intervals is avoided and whereby a FIFO fill level can be ascertained.

Fukui discloses data transmission by

(e) transmitting FIFO **(bit-by-bit)** status **(boundaries between the frames)** flow

information **(reads out)** out-of-band **(zero bit is control information/signaling)**

whereby re-encoding of data and insertion of control information upon pre-determined

intervals is avoided and whereby a FIFO fill level **(boundaries between the frames)**

can be ascertained **(zero bit insertion to denote the boundaries between the frames**

and respective circuit 1000 reads out the bits one-by-one, col. 1, ln. 20-21 and 36-

43).

At the time of the invention, it would have been obvious to a person of ordinary

skill in the art to combine (e) transmitting FIFO status flow information out-of-band

whereby re-encoding of data and insertion of control information upon pre-determined

intervals is avoided as taught in Fukui with Ayanoglu in order to provide for frame

detection in a data stream. Fukui, col. 1, ln. 8.

Allowable Subject Matter

11.   Claims 14 and 15 would be allowable if rewritten or amended to overcome the

rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

12.   Claims 2-9,12-15 would be allowable if rewritten to overcome the rejection(s)

under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of

the limitations of the base claim and any intervening claims.

Conclusion

13.   Applicant's amendment necessitated the new ground(s) of rejection presented in
this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP
§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37
CFR 1.136(a).
        A shortened statutory period for reply to this final action is set to expire THREE
MONTHS from the mailing date of this action. In the event a first reply is filed within
TWO MONTHS of the mailing date of this final action and the advisory action is not
mailed until after the end of the THREE-MONTH shortened statutory period, then the
shortened statutory period will expire on the date the advisory action is mailed, and any
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of
the advisory action. In no event, however, will the statutory period for reply expire later
than SIX MONTHS from the date of this final action.

14.   Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Blanche Wong whose telephone number is 571-272-
3177. The examiner can normally be reached on Monday through Friday, 830am to
530pm.
        If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the
organization where this application or proceeding is assigned is 571-273-8300.
        Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
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USPTO Customer Service Representative or access to the automated information
system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bw

BW
May 7, 2007

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SUPERVISORY PATENT EXAMINER
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